Table 2— Analysis of water-soluble vitamins from flight tortillas and corresponding ground controls.[a,b,c]

Tortillas	Time 0	13 d	353 d	596 d	880 d
Thiamin[d,e] (mg/100 g)					
Ground	0.387 ± 0.026	0.386 ± 0.029	0.312 ± 0.004[f]	0.250 ± 0.011[f]	0.166 ± 0.005[f]
Flight	0.364 ± 0.025	0.425 ± 0.037[f]	0.312 ± 0.012[f]	0.262 ± 0.026[f]	0.167 ± 0.005[f]
Riboflavin[d] (mg/100 g)					
Ground	0.359 ± 0.017	0.307 ± 0.010	0.377 ± 0.108	0.427 ± 0.064[f]	0.362 ± 0.022
Flight	0.344 ± 0.015	0.308 ± 0.010	0.340 ± 0.037	0.443 ± 0.067[f]	0.350 ± 0.018
Niacin[d] (mg/100 g)					
Ground	3.875 ± 0.151	4.023 ± 0.162	3.962 ± 0.224	3.726 ± 0.123[f]	3.998 ± 0.218
Flight	4.010 ± 0.190	3.872 ± 0.176	3.925 ± 0.282	3.630 ± 0.171[f]	3.853 ± 0.136
Folic acid[d] (mg/100 g)					
Ground	0.129 ± 0.006	0.110 ± 0.005[f]	0.085 ± 0.004[f]	0.076 ± 0.004[f]	0.071 ± 0.006[f]
Flight	0.126 ± 0.007	0.108 ± 0.003[f]	0.086 ± 0.003[f]	0.072 ± 0.007[f]	0.067 ± 0.002[f]

[a]Data are means ± SD for time 0 controls, flight samples ($n = 6$), and ground controls ($n = 9$). At time 0, 15 samples were analyzed and randomly divided into 2 groups. These groups were tested using Student's t-test to confirm that they were not different. All flight and ground samples at each time point were analyzed within 30 d of landing.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the food.
[c]The serving size for tortillas packaged for spaceflight is 60 g.
[d]Significant effect of time, $P < 0.001$.
[e]Significant interaction between group and time, $P < 0.01$.
[f]Significantly different from time 0 as determined by a Bonferroni t-test.

Table 3 – Amino acid, hexanal, and vitamin analysis of flight salmon and corresponding ground controls.[a,b,c]

Salmon	Time 0	13 d	353 d	596 d	880 d
Aspartic acid[d] (mg/100 g)					
Ground	2120 ± 114	2147 ± 66	2310 ± 71[e]	2161 ± 61	2126 ± 83
Flight	2144 ± 254	2072 ± 102	2263 ± 68[e]	2138 ± 68	2097 ± 87
Threonine[d] (mg/100 g)					
Ground	960 ± 54	989 ± 38	1097 ± 35[e]	1022 ± 32	1001 ± 37
Flight	990 ± 113	958 ± 50	1057 ± 45[e]	993 ± 43	993 ± 50
Serine[d,f] (mg/100 g)					
Ground	916 ± 45	911 ± 33	1008 ± 34[e]	949 ± 26	850 ± 43[e]
Flight	923 ± 113	865 ± 46	973 ± 39[e]	915 ± 35	829 ± 36[e]
Glutamic acid[d] (mg/100 g)					
Ground	3006 ± 146	3028 ± 113	3278 ± 98[e]	3118 ± 66	3176 ± 139
Flight	3021 ± 356	2932 ± 131	3228 ± 95[e]	3062 ± 68	3115 ± 126
Proline[d] (mg/100 g)					
Ground	741 ± 42	752 ± 25	782 ± 25[e]	702 ± 21	744 ± 37
Flight	750 ± 60	738 ± 33	772 ± 17[e]	699 ± 15	704 ± 37
Glycine[d] (mg/100 g)					
Ground	960 ± 42	986 ± 38	1048 ± 36[e]	1003 ± 24	970 ± 29
Flight	960 ± 116	953 ± 42	1040 ± 23[e]	986 ± 31	960 ± 46
Alanine[d] (mg/100 g)					
Ground	1264 ± 67	1279 ± 53	1368 ± 45[e]	1303 ± 37	1278 ± 40
Flight	1273 ± 149	1232 ± 61	1343 ± 36[e]	1275 ± 41	1267 ± 64
Cystine[g] (mg/100 g)					
Ground	215 ± 11	223 ± 10	229 ± 8	215 ± 11	219 ± 14
Flight	230 ± 18	210 ± 17	227 ± 15	211 ± 15	226 ± 13
Valine[d] (mg/100 g)					
Ground	1153 ± 73	1190 ± 57	1187 ± 36	1209 ± 36	1045 ± 51[e]
Flight	1174 ± 137	1140 ± 56	1208 ± 31	1205 ± 31	1054 ± 50[e]
Methionine[d] (mg/100 g)					
Ground	648 ± 35	681 ± 36	728 ± 30[e]	666 ± 39	651 ± 29
Flight	693 ± 49	635 ± 47	722 ± 50[e]	649 ± 40	630 ± 39
Isoleucine (mg/100 g)					
Ground	979 ± 63	1007 ± 53	1004 ± 29[e]	1026 ± 30	982 ± 59
Flight	997 ± 117	970 ± 48	1027 ± 24[e]	1028 ± 31	980 ± 49
Leucine[d] (mg/100 g)					
Ground	1694 ± 95	1713 ± 73	1659 ± 48[e]	1751 ± 48	1673 ± 78
Flight	1711 ± 204	1657 ± 81	1812 ± 61[e]	1720 ± 58	1635 ± 75
Tyrosine[d,f] (mg/100 g)					
Ground	859 ± 54	813 ± 45[e]	968 ± 34[e]	931 ± 29[e]	787 ± 40[e]
Flight	860 ± 98	783 ± 54[e]	920 ± 54[e]	915 ± 29[e]	772 ± 36[e]
Phenylalanine[d] (mg/100 g)					
Ground	914 ± 54	928 ± 39	990 ± 32[e]	961 ± 27	895 ± 41
Flight	926 ± 111	900 ± 46	973 ± 33[e]	943 ± 26	876 ± 42
Lysine[d] (mg/100 g)					
Ground	2163 ± 107	2162 ± 102	2290 ± 81	2237 ± 65	1956 ± 42[e]
Flight	2169 ± 250	2098 ± 110	2255 ± 66	2202 ± 69	1952 ± 107[e]
Histidine[d] (mg/100 g)					
Ground	595 ± 33	607 ± 25	640 ± 23[e]	622 ± 16	585 ± 17
Flight	603 ± 73	580 ± 28	630 ± 14[e]	613 ± 21	589 ± 26
Arginine[d] (mg/100 g)					
Ground	1268 ± 68	1292 ± 49	1359 ± 41[e]	1406 ± 44[e]	1211 ± 54[e]
Flight	1260 ± 153	1247 ± 58	1337 ± 41[e]	1373 ± 40[e]	1196 ± 60[e]
Tryptophan[d,f] (mg/100 g)					
Ground	291 ± 26	299 ± 14	351 ± 15[e]	316 ± 20	258 ± 27[e]
Flight	299 ± 20	290 ± 17	345 ± 19[e]	297 ± 20	231 ± 16[e]
Hexanal (ppm)					
Ground	<0.100	<0.100	<0.100	<0.100	<0.100
Flight	<0.100	<0.100	<0.100	<0.100	<0.100
Niacin[f,g] (mg/100 g)					
Ground	7.19 ± 0.34	6.85 ± 0.53	6.90 ± 0.67	6.57 ± 0.66[e]	7.27 ± 0.70
Flight	6.91 ± 0.61	6.29 ± 0.59	6.81 ± 0.73	6.29 ± 0.47[e]	6.69 ± 0.96
Vitamin B_6[d,h] (mg/100 g)					
Ground	0.350 ± 0.030	0.358 ± 0.021	0.375 ± 0.027	0.299 ± 0.023[e]	0.280 ± 0.040[e]
Flight	0.360 ± 0.030	0.347 ± 0.027	0.322 ± 0.023[i]	0.305 ± 0.009[e]	0.285 ± 0.028[e]
Vitamin B_{12} (μg/100 g)					
Ground	2.54 ± 0.12	2.37 ± 0.21	2.50 ± 0.52	2.61 ± 0.26	2.47 ± 0.23
Flight	2.51 ± 0.11	2.48 ± 0.34	2.57 ± 0.12	2.62 ± 0.25	2.23 ± 0.25
Vitamin D (IU/100 g)					
Ground	394 ± 69	339 ± 50	357 ± 47	330 ± 91	367 ± 40
Flight	369 ± 40	333 ± 54	379 ± 42	344 ± 68	374 ± 77

[a]Data are means ± SD for time 0 controls, flight samples (n = 6), and ground controls (n = 9). At time 0, 15 samples were analyzed and randomly divided into 2 groups. These groups were tested using Student's t -test to confirm that they were not different. All flight and ground samples at each time point were analyzed within 30 d of landing.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the food.
[c]The serving size for salmon packaged for spaceflight is 85 g.
[d]Significant effect of time, $P < 0.001$,
[e]Significantly different from time 0 as determined by a Bonferroni t-test.
[f]Significant difference between groups (ground and flight), $P < 0.05$.
[g]Significant effect of time, $P < 0.05$.
[h]Significant interaction between group and time, $P < 0.05$.
[i]Significantly different from ground as determined by a Bonferroni t-test, $P < 0.05$.

Table 4 – Amino acid, vitamin, and hexanal analysis of flight almonds and corresponding ground controls.[a,b,c]

Almonds	Time 0	13 d	353 d	596 d	880 d
Aspartic acid[d] (mg/100 g)					
Ground	2529 ± 74	2571 ± 70	2500 ± 74	2612 ± 50	2362 ± 128[e]
Flight	2594 ± 66	2560 ± 50	2540 ± 117	2600 ± 96	2328 ± 184[e]
Threonine[f] (mg/100 g)					
Ground	623 ± 17	618 ± 14	608 ± 18	624 ± 11	634 ± 17
Flight	627 ± 16	618 ± 10	620 ± 27	636 ± 21	629 ± 23
Serine[d,g] (mg/100 g)					
Ground	946 ± 28	968 ± 26	928 ± 35	940 ± 15	900 ± 56[e]
Flight	966 ± 26	945 ± 14	975 ± 34	933 ± 31	850 ± 42[e]
Glutamic acid (mg/100 g)					
Ground	6134 ± 162	6206 ± 160	6215 ± 174	6397 ± 111	6104 ± 463
Flight	6219 ± 120	6220 ± 74	6260 ± 249	6310 ± 190	6007 ± 325
Proline[d] (mg/100 g)					
Ground	954 ± 30	978 ± 23	969 ± 29	884 ± 31[e]	933 ± 71
Flight	970 ± 26	992 ± 35	967 ± 37	887 ± 36[e]	926 ± 111
Glycine[d] (mg/100 g)					
Ground	1475 ± 32	1471 ± 28	1471 ± 28	1522 ± 29	1411 ± 39[e]
Flight	1493 ± 24	1463 ± 15	1483 ± 42	1498 ± 36	1410 ± 46[e]
Alanine[f] (mg/100 g)					
Ground	1031 ± 27	1024 ± 25	1021 ± 27	1042 ± 16	1012 ± 26[e]
Flight	1047 ± 20	1023 ± 19	1035 ± 41	1034 ± 28	1001 ± 15[e]
Cystine[f,h,i] (mg/100 g)					
Ground	259 ± 11	259 ± 9	271 ± 6	261 ± 13	293 ± 19[e]
Flight	263 ± 11	253 ± 8	267 ± 15	270 ± 16	258 ± 29
Valine[d,h,j] (mg/100 g)					
Ground	1009 ± 29	974 ± 32	968 ± 25	1067 ± 33[e]	890 ± 26[e]
Flight	1020 ± 26	1003 ± 27	958 ± 41[e]	1062 ± 24	976 ± 36
Methionine[d] (mg/100 g)					
Ground	150 ± 9	147 ± 7	166 ± 15[e]	148 ± 8	151 ± 5
Flight	150 ± 8	147 ± 8	168 ± 12[e]	150 ± 6	154 ± 11
Isoleucine[d,h,j] (mg/100 g)					
Ground	858 ± 24	829 ± 30	833 ± 18	908 ± 24[e]	828 ± 26
Flight	870 ± 24	855 ± 15	805 ± 33[e]	894 ± 24	894 ± 31
Leucine[d] (mg/100 g)					
Ground	1578 ± 47	1571 ± 40	1518 ± 44[e]	1616 ± 28	1529 ± 37[e]
Flight	1610 ± 36	1582 ± 35	1533 ± 65[e]	1607 ± 50	1527 ± 41[e]
Tyrosine[d] (mg/100 g)					
Ground	638 ± 18	634 ± 17	623 ± 20	689 ± 9[e]	707 ± 17[e]
Flight	649 ± 20	642 ± 13	635 ± 30	686 ± 23[e]	711 ± 17[e]
Phenylalanine[d] (mg/100 g)					
Ground	1228 ± 36	1220 ± 33	1179 ± 33[e]	1278 ± 22	1192 ± 24[e]
Flight	1246 ± 28	1233 ± 19	1188 ± 44[e]	1265 ± 36	1193 ± 39[e]
Lysine[d] (mg/100 g)					
Ground	596 ± 15	591 ± 11	568 ± 10	615 ± 11	494 ± 105[e]
Flight	596 ± 10	583 ± 12	572 ± 16	592 ± 39	500 ± 147[e]
Histidine[d] (mg/100 g)					
Ground	551 ± 14	547 ± 14	534 ± 15[e]	568 ± 13	521 ± 5[e]
Flight	559 ± 12	552 ± 8	535 ± 21[e]	567 ± 17	520 ± 27[e]
Arginine[d] (mg/100 g)					
Ground	2489 ± 120	2508 ± 84	2428 ± 70[e]	2713 ± 86[e]	2646 ± 60[e]
Flight	2569 ± 106	2503 ± 43	2455 ± 107[e]	2690 ± 89[e]	2682 ± 117[e]
Tryptophan[d] (mg/100 g)					
Ground	210 ± 9	221 ± 6	274 ± 11[e]	241 ± 10[e]	205 ± 7
Flight	211 ± 11	218 ± 10	273 ± 16[e]	255 ± 9[e]	215 ± 14
Hexanal[d,h] (ppm)					
Ground	0.229 ± 0.048	0.487 ± 0.051[e]	0.734 ± 0.222[e]	0.110 ± 0.009	0.598 ± 0.301[e]
Flight	0.247 ± 0.052	0.438 ± 0.098[e]	0.879 ± 0.116[e]	0.108 ± 0.006	0.778 ± 0.040[e]
Biotin[d,i] (mg/100 g)					
Ground	0.041 ± 0.002	0.042 ± 0.006	0.046 ± 0.002[e]	0.042 ± 0.002	0.040 ± 0.022
Flight	0.040 ± 0.004	0.039 ± 0.004	0.048 ± 0.002[e]	0.043 ± 0.001	0.045 ± 0.005[k]
Riboflavin[d] (mg/100 g)					
Ground	1.280 ± 0.160	1.308 ± 0.081	1.131 ± 0.064	1.528 ± 0.236[e]	1.311 ± 0.163
Flight	1.244 ± 0.093	1.397 ± 0.124	1.175 ± 0.090	1.380 ± 0.049[e]	1.335 ± 0.185
Vitamin E[d] (IU/100 g)					
Ground	36 ± 1	30 ± 2[e]	36 ± 4	36 ± 1	35 ± 4
Flight	36 ± 2	32 ± 1[e]	36 ± 3	35 ± 1	39 ± 5

[a]Data are means ± SD for time 0 controls, flight samples (n = 6), and ground controls (n = 9). At time 0, 15 samples were analyzed and randomly divided into 2 groups. These groups were tested using Student's t -test to confirm that they were not different. All flight and ground samples at each time point were analyzed within 30 d of landing.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the food.
[c]The serving size for almonds packaged for spaceflight is 45 g.
[d]Significant effect of time, $P < 0.001$.
[e]Significantly different from time 0 as determined by a Bonferroni t-test.
[f]Significant effect of time, $P < 0.05$. Significant interaction between group and time, $P < 0.01$.
[h]Significant difference between groups (ground and flight), $P < 0.05$. [i]Significant interaction between group and time, $P < 0.001$.
[j]Significant interaction between group and time, $P < 0.05$. [k]Significantly different from ground as determined by a Bonferroni t-test.

Table 5 – Vitamin analysis of flight broccoli au gratin and corresponding ground controls.[a,b,c]

Broccoli au gratin	Time 0	13 d	353 d	596 d	880 d
Thiamin (mg/100 g)					
Ground	0.114 ± 0.009	0.122 ± 0.031	0.154 ± 0.058	0.127 ± 0.009	0.110 ± 0.010
Flight	0.120 ± 0.036	0.160 ± 0.083	0.123 ± 0.008	0.127 ± 0.010	0.120 ± 0.010
Vitamin B_6[d,e] (mg/100 g)					
Ground	0.512 ± 0.049	0.506 ± 0.023	0.628 ± 0.066[f]	0.412 ± 0.030[f]	0.510 ± 0.050
Flight	0.552 ± 0.026	0.536 ± 0.114	0.615 ± 0.056[f]	0.463 ± 0.035[f]	0.580 ± 0.040
Folic acid[d] (mg/100 g)					
Ground	0.367 ± 0.033	0.335 ± 0.030[f]	0.295 ± 0.027[f]	0.295 ± 0.037[f]	0.295 ± 0.053[f]
Flight	0.381 ± 0.033	0.306 ± 0.025[f]	0.270 ± 0.043[f]	0.294 ± 0.016[f]	0.288 ± 0.040[f]
Biotin[g,h] (mg/100 g)					
Ground	0.017 ± 0.001	0.018 ± 0.001[f]	0.017 ± 0.001	0.015 ± 0.001	0.016 ± 0.001
Flight	0.017 ± 0.001	0.015 ± 0.003	0.016 ± 0.001	0.016 ± 0.001	0.017 ± 0.001
Vitamin B_{12}[d] (μg/100 g)					
Ground	0.343 ± 0.021	0.399 ± 0.010[f]	0.490 ± 0.084[f]	0.458 ± 0.039[f]	0.418 ± 0.042[f]
Flight	0.329 ± 0.023	0.390 ± 0.028[f]	0.488 ± 0.055[f]	0.442 ± 0.020[f]	0.413 ± 0.024[f]
β-carotene[d] (mg/100 g)					
Ground	0.87 ± 0.14	0.96 ± 0.14	0.93 ± 0.20	0.13 ± 0.02[f]	0.23 ± 0.05[f]
Flight	0.82 ± 0.08	0.91 ± 0.21	0.84 ± 0.41	0.18 ± 0.04[f]	0.23 ± 0.07[f]
Vitamin C[d] (mg/100 g)					
Ground	158 ± 9	162 ± 12	162 ± 12	144 ± 23[f]	133 ± 13[f]
Flight	166 ± 12	163 ± 11	148 ± 13	154 ± 6[f]	131 ± 11[f]
Vitamin K1[d,i] (μg/100 g)					
Ground	321 ± 54	346 ± 39	317 ± 40	294 ± 43[f]	283 ± 51[f]
Flight	323 ± 46	305 ± 44	303 ± 59	226 ± 36[f]	271 ± 37[f]

[a]Data are means ± SD for time 0 controls, flight samples ($n = 6$), and ground controls ($n = 9$). At time 0, 15 samples were analyzed and randomly divided into 2 groups. These groups were tested using Student's t-test to confirm that they were not different. All flight and ground samples at each time point were analyzed within 30 d of landing.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the food.
[c]The serving size for broccoli au gratin packaged for spaceflight is 30 g (dry weight).
[d]Significant effect of time, $P < 0.001$.
[e]Significant difference between groups (ground and flight), $P < 0.01$.
[f]Significantly different from time 0 as determined by a Bonferroni t-test.
[g]Significant effect of time, $P < 0.05$.
[h]Significant interaction between group and time, $P < 0.001$.
[i]Significant difference between groups (ground and flight), $P < 0.05$.

Table 6 – Vitamin analysis of flight apricots and corresponding ground controls.[a,b,c]

Dried apricots	Time 0	13 d	353 d	596 d	880 d
β-carotene[d] (mg/100 g)					
Ground	4.47 ± 0.54	4.27 ± 0.41	3.67 ± 0.29	7.62 ± 0.56[e]	8.27 ± 1.04[e]
Flight	4.67 ± 0.35	4.09 ± 0.43	4.26 ± 1.41	7.86 ± 0.40[e]	7.98 ± 0.86[e]
Vitamin E[d,f] (IU/100 g)					
Ground	6.65 ± 0.50	5.77 ± 0.52	6.14 ± 0.72	6.51 ± 0.57	6.74 ± 0.79
Flight	6.44 ± 0.84	6.82 ± 0.44	5.00 ± 1.25[e]	7.11 ± 0.63	7.84 ± 0.95
Vitamin K1 (μg/100 g)					
Ground	11 ± 1	<10.0	<10.0	<10.0	<10.0
Flight	11 ± 0	<10.0	<10.0	<10.0	<10.0

[a]Data are means ± SD for time 0 controls, flight samples ($n = 6$), and ground controls ($n = 9$). At time 0, 15 samples were analyzed and randomly divided into 2 groups. These groups were tested using Student's t-test to confirm that they were not different. All flight and ground samples at each time point were analyzed within 30 d of landing.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the food.
[c]The serving size for dried apricots packaged for spaceflight is 62 g.
[d]Significant effect of time, $P < 0.001$.
[e]Significantly different from time 0 as determined by a Bonferroni t-test.
[f]Significant interaction between group and time, $P < 0.001$.

Table 7 — Vitamin analysis of flight multivitamin and corresponding ground controls.[a,b]

Multivitamin	Time 0	13 d	353 d	596 d	880 d
β-carotene[c] (mg/tablet)					
Ground	0.733 ± 0.071	0.760 ± 0.068[d]	0.727 ± 0.042	0.737 ± 0.065	0.648 ± 0.090
Flight	0.677 ± 0.100	0.814 ± 0.025[d]	0.770 ± 0.056	0.772 ± 0.182	0.686 ± 0.092
Biotin[e,f] (μg/tablet)					
Ground	39 ± 1	41 ± 2[d]	41 ± 2[d]	38 ± 2	36 ± 1[d]
Flight	39 ± 3	43 ± 3[d]	44 ± 4[d]	38 ± 1	36 ± 1[d]
Folic acid[e,g] (μg/tablet)					
Ground	607 ± 54	552 ± 17[d]	529 ± 14[d]	528 ± 23[d]	549 ± 37[d]
Flight	601 ± 17	576 ± 9[d]	539 ± 11[d]	569 ± 13[d]	556 ± 18[d]
Niacin[e] (mg/tablet)					
Ground	22 ± 0	22 ± 1	22 ± 0	23 ± 1[d]	22 ± 1
Flight	22 ± 0	22 ± 0	22 ± 0	23 ± 0[d]	22 ± 0
Vitamin B_6[e] (mg/tablet)					
Ground	4.280 ± 0.101	4.176 ± 0.162	4.141 ± 0.052[d]	4.074 ± 0.106[d]	4.118 ± 0.058[d]
Flight	4.237 ± 0.035	4.208 ± 0.071	4.178 ± 0.019[d]	4.125 ± 0.133[d]	4.120 ± 0.022[d]
Riboflavin[e] (mg/tablet)					
Ground	2.26 ± 0.07	2.19 ± 0.09[d]	2.22 ± 0.05	2.14 ± 0.16[d]	2.09 ± 0.04[d]
Flight	2.24 ± 0.07	2.16 ± 0.06[d]	2.25 ± 0.02	2.18 ± 0.07[d]	2.08 ± 0.02[d]
Thiamin[e] (mg/tablet)					
Ground	1.53 ± 0.03	1.58 ± 0.04[d]	1.79 ± 0.04[d]	1.45 ± 0.10	1.51 ± 0.02
Flight	1.51 ± 0.05	1.58 ± 0.02[d]	1.80 ± 0.02[d]	1.52 ± 0.07	1.54 ± 0.02
Total vitamin K1[e] (μg/tablet)					
Ground	19 ± 1	21 ± 1[d]	18 ± 0[d]	18 ± 0[d]	17 ± 0[d]
Flight	20 ± 1	21 ± 1[d]	18 ± 0[d]	19 ± 1[d]	18 ± 0[d]
Vitamin A[e,h] (retinol) (IU/tablet)					
Ground	3360 ± 247	3184 ± 215	2694 ± 190[d]	2703 ± 119[d]	2515 ± 213[d]
Flight	3510 ± 216	3348 ± 125	3095 ± 211[d]	2807 ± 199[d]	2253 ± 989[d]
Vitamin B_{12}[e,i] (μg/tablet)					
Ground	34 ± 1	32 ± 1[d]	31 ± 2[d]	33 ± 1	31 ± 1[d]
Flight	33 ± 2	33 ± 2	34 ± 1	34 ± 1	31 ± 1
Vitamin C[e] (mg/tablet)					
Ground	68 ± 2	71 ± 3	66 ± 2[d]	64 ± 3[d]	60 ± 5[d]
Flight	69 ± 2	70 ± 3	64 ± 2[d]	64 ± 1[d]	63 ± 4[d]
Vitamin D[e] (IU/tablet)					
Ground	521 ± 52	527 ± 33	564 ± 54	468 ± 30[d]	569 ± 23
Flight	551 ± 55	518 ± 27	518 ± 60	464 ± 39[d]	538 ± 21
Vitamin E[e,i] (IU/tablet)					
Ground	58 ± 2	52 ± 4[d]	58 ± 5	51 ± 4[d]	51 ± 5[d]
Flight	59 ± 1	43 ± 1[d]	61 ± 1	52 ± 4[d]	53 ± 6[d]

[a]Data are means ± SD for time 0 controls, flight samples ($n = 6$), and ground controls ($n = 9$). At time 0, 15 samples were analyzed and randomly divided into 2 groups. The groups were tested using Student's t-test to confirm that they were not different. One replicate equals 20 pills packaged in a single bag. All flight and ground samples at each time point were analyzed within 30 d of landing. All pills were protected from light during the entire study.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the pills.
[c]Significant effect of time, $P < 0.01$.
[d]Significantly different from time 0 as determined by a Bonferroni t-test.
[e]Significant effect of time, $P < 0.001$.
[f]Significant difference between groups (ground and flight), $P < 0.01$.
[g]Significant difference between groups (ground and flight), $P < 0.05$.
[h]Significant difference between groups (ground and flight), $P < 0.001$.
[i]Significant interaction between group and time, $P < 0.001$.

Table 8— Vitamin D analysis of flight vitamin D supplement and corresponding ground controls.[a,b]

Vitamin D supplement	Time 0	13 d	353 d	596 d	880 d
Vitamin D[c] (IU/tablet)					
Ground	442 ± 26	418 ± 20[d]	412 ± 16[d]	424 ± 43[d]	336 ± 31[d]
Flight	474 ± 51	410 ± 15[d]	429 ± 19[d]	419 ± 49[d]	383 ± 21[d]

[a]Data are means ± SD for time 0 controls, flight samples ($n = 6$), and ground controls ($n = 9$). At time 0, 15 samples were analyzed and randomly divided into 2 groups. The groups were tested using Student's *t*-test to confirm that they were not different. One replicate equals 20 pills packaged in a single bag. All flight and ground samples at each time point were analyzed within 30 d of landing. All pills were protected from light during the entire study.
[b]The data were analyzed using a two-way ANOVA to test the effects of time and spaceflight on nutrients in the pills.
[c]Significant effect of time, $P < 0.001$.
[d]Significantly different from time 0 as determined by a Bonferroni *t*-test.

Source for all tables: Zwart SR, Kloeris VL, Perchonok MH, Braby L, Smith SM. Assessment of nutrient stability in foods from the space food system after long-duration spaceflight on the ISS. J Food Sci. 2009 Sep;74(7):H209-17.